COLUMBUS RECREATION AND PARKS

VOLUME 1, ISSUE 1

# INVASIVE SPECIES ACTIVITIES

SPRING 2005

INSIDE THIS ISSUE:



SPECIAL POINTS OF INTEREST:

- **Briefly highlight your point of interest here.**
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## WHAT IS AN INVASIVE?

Nonindigenous, exotics, introduced and non-native all describe plants and animals living outside their natural geographic boundaries. Thousands of exotic plants and animals have been introduced into the United States. Some of these organisms have been intentionally imported for use in agriculture, the pet industry, and fish and wildlife management. Others have been accidentally introduced from ships' ballast water, in packing materials and soils, or as hitchhikers on other plants and animals.

Many exotic species such as soybeans and wheat have been beneficial and contribute significantly to the economy. Others such as the gypsy moth and kudzu have a negative impact. In addiction, plant and animal species from the Americas have been exported to other parts of the world with similar effects.

Once established in new environments, many exotics displace native plants and animals, alter ecosystems, cause disease, and interfere with human activities in industry, agriculture, and recreation. The zebra mussel is a good example of a recent introduction that has caused untold damage to surface water users.

Exotics typically leave their natural enemies behind, upsetting nature's system of checks and balances and giving them an unfair advantage in their new home. With time, an equilibrium is re-established, frequently to the detriment of the native species.


Above: The zebra mussel has caused extensive damage to the Great Lakes region.

## ABOUT THIS MANUAL

The activities and resources in this newsletter will help you better understand what exotics are and how they impact you.

The program that parallels the information and activities in this newsletter are appropriate for students in grades 4-8. The program is designed to last an hour and students will leave with a better understanding what an invasive species is, how they arrive in the United States, and why they are able to thrive so easily. An additional component involving student participation in the eradication of the a particular invasive native to the local area, Honeysuckle, is also strongly recommended.

## OH EXOTIC!

Purpose: The activity is based on the popular Project Wild, "Oh Deer" activity. It deals with the elements that influence the success of an exotic including a large enough population to reproduce, climate, nutrients, water, and lack of a predator.

Subjects: Science and Math

Materials: Butch block paper for constructing a graph, and a marking utensil.

Facilities: Open space or field

Procedure: Divide group into three sub-groups. One group will represent exotic species, another the needs of the exotics (sunlight, water, and nutrition), and the final group will represent obstacles exotics must overcome in a new location such as climate, competition, and susceptibility to predators. The Exotics and the Needs will be on opposite sides of the playing area and the Environmental Needs will be located in the area in between. The object is for the exotics to run past the Environmental Conditions to obtain their need. The object of the Environmental Conditions is to have the exotics flourish or become extinct.

These are the roles:

EXOTICS:

Kudzo

Honeysuckle

Zebra Mussel

Boll Weevil

ENVIRONMENTAL CONDITIONS & SIGNS:

Drought—hands over mouth

Lack of Predators—arms extended

Competition—crouching

Use in Commerce—arms by side

NEEDS:

Suitable climate

Water

Nutrition

No Predators

The Exotics and Needs line up on opposite sides of the field, facing away from one another. Individuals in both groups make a sign for one of the needs, turn facing each other, and Exotics run to the other side of the field to have their NEED fulfilled. Only one EXOTIC per need. Environmental Conditions help or hinder the exotics to flourish. (Use in commerce and lack of predators help, drought and strong competition hinder). Exotics that cannot find their need perish. After they perish they are added to the Environmental Conditions group, with the leader deciding which condition they will represent. Each round the leader records how many exotics perished and how many survived. When drought or competition catches an exotic, the exotic dies. When lack of predators or commerce catches an exotics, they become that species in the next round as that exotic.

The Boll Weevil has caused an estimated $14 billion loss in yield to the U.S. cotton industry since its arrival from Mexico in 1892.

**"When one tugs at a single thing in nature, one finds it attached to the rest of the world"**
**~John Muir**

## EVERYDAY EXOTICS

Purpose: Helps the student understand exotics are everywhere, including backyards, kitchens, and neighborhoods

Subjects: Science, Social Studies, Math

Materials: Exotic Species Fact Sheet, copies of world map

Procedure: Have students list vegetables, fruits, or ornamental plants they encounter in their everyday lives at the grocery, plant nurseries, or gardens. Determine their origins. (such as Carrot—Afghanistan). What percentage are native to North America? South America? Asia? Europe? Australia? Students will probably be surprised to learn the majority of these are not native to the United States.

Extension: Determine the percentage of exotics in each students' life originating from different countries.

Native to Brazil, the fire ant probably came to the U.S. in cargo or soil used as ballast in ships.

## EXOTIC WATCH

Purpose: This activity documents the spread of exotic species. You can use this activity for building awareness or reinforcement

Subjects: Science, Social Studies, and Language Arts

Materials: World map, marking pencils, and a list of invasive species and their history

Procedure: Using the list of invasive species (this can be obtained from online sources, newspapers, or magazines) start by filling in the appropriate cells on the Exotic Watch Data Chart. As species are moved from place to place, several entries may be necessary.

Extension: After you make an entry, draw an arrow on the world map, showing the path the organism took. It is useful to use different color pencils or different styles of lines to represent different methods or causes for the organisms' relocation.

The gypsy moth was accidentally introduced into Massachusetts in 1869 as a failed attempt to start a silkworm industry.

## EXOTICS IN THE WEB OF LIFE

Purpose: This activity simulates the complex problems associated with invasive species.

Subjects: Science

Materials: Ball of string, index cards, masking tape, miscellaneous invasive species profile, pair of scissors.

Procedure: Begin playing Web of Life with participants sitting in a circle. Have each student decide what animal, plant, or abiotic material he or she represents (encourage those native to the area). Have them write or draw the name they represent on the card and tape it to their shirts, so all others can see. Begin by going around and have the students comment on what they are and why they depend on the other plants, animals or abiotic materials represented. Pass the string to that person and have that person repeat the scenario. When everyone is connected in the "web of life" it is time to introduce an invasive. The invasive should have no known predators. Give this person the scissors and allow the person to move around freely through the web, snipping lines at random. During the wrap up, discuss how problematic invasives can be and what steps can be taken to control them.

**"Man did not weave the web of life, he is merely a strand in it. Whatever he does to the web, he does to himself"**
**~Chief Seattle**

## INVASION!

Purpose: In this activity you will select an exotic species (honeysuckle or garlic mustard) that is considered a pest and work to eradicate it.

Subjects: Science, Social Studies, Math

Materials: Plant ID book

Facilities: Local park or wooded area where an exotic is growing

Procedure: Begin by identifying an exotic in need of eradication. Learn as much about the plant as possible and decide on a strategy for eradicating it. The most desirable method is physically removing the plant. Map the area and estimate how extensive the infestation is. Begin eradication, keeping accurate records as to when and how much plant material has been removed. Also note plants that come back. Keep records by placing a number or dot on a map identifying where plants have been removed in each eradication effort. The number of plants removed in each eradication and those that returned can be plotted on a graph using different colors.

**We are on the Web!**

**www.columbusrecparks.com**


**COLUMBUS RECREATION AND PARKS**

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COLUMBUS RECREATION AND PARKS

**SOMETHING FOR EVERYONE, *NATURALLY!***

Indian Village is a facility offering outdoor and environmental education, Native American studies, arts, and other programs managed by Columbus Recreation and Parks Outdoor Education Section. This wildlife filled wooded plot, on the west bank of the Scioto River, is where we base our programs. We offer year round programs for a diverse population of Columbus residents and the neighboring communities. Serving participants from three years of age and up to senior citizens—our goals is to educate and entertain participants with the joy of the out doors, nature, wildlife, adventure, arts, and Native American culture.

## THE NEVER ENDING BATTLE: HONEYSUCKLE

Description: Honeysuckle can be in the form of a trailing vine or bush. The simple, opposite leaves are oval to oblong in shape and range from 1.5 to 3 inches in length. The extremely fragrant, two-lipped flowers are borne in pairs in the axils of young branches and are produced throughout the summer.

Habitat: honeysuckle occurs primarily in disturbed habitats such as roadsides, trails, fence rows, abandoned fields and forest edges. It often invades native plant communities after natural or human induced disturbance such as logging, road building, floods, glaze and windstorms, or pest and disease outbreaks.

Distribution: Japanese honeysuckle is native to eastern Asia. Introduced to cultivation in 1862 on Long Island, Japanese honeysuckle is now widely naturalized in the eastern and central United States. Japanese honeysuckle was, and in some areas still is, planted as an ornamental ground cover, for erosion control, and for wildlife food and habitat.

Threats: Can decrease light availability within the habitat, deplete soil moisture and nutrients, or topple upright stems through the sheer weight of accumulated vines. Honeysuckle can also suppress plant growth, inhibit regeneration in woody and herbaceous plants, and altercate habitats used by native wildlife.

Control: Small populations can be controlled by careful hand-pulling, grubbing with a hoe or a shovel, and removal of trailing vines.

*Honeysuckle is taking over parts of Indian Village and disrupting native populations of wildflowers from growing.*